

## Method and Apparatus for Relayed Communication Using Band-Pass Signals for Self-Interference Cancellation

### ABSTRACT OF THE DISCLOSURE

Self-interference cancellation is provided in two-way relayed electromagnetic communication between a first device and a second device through a relay station wherein a representation of a relayed composite signal above baseband and a representation of a locally modulated interface signal above baseband interact to effect the self-interference cancellation. Specifically, the composite signal, which contains a relayed version of the locally modulated (near) signal from the first device and a relayed version of a modulated far signal from the second device, is received at the first device from the relay station. The composite signal is then provided in a representation as a first interface signal at a first frequency at or above baseband to a canceler module of the first device and a representation of the modulated near signal at a second frequency above baseband is provided as a second interface signal to the canceler module. Part of the relayed version of the modulated near signal is canceled from the representation of the composite signal using the representation of the modulated near signal as provided to the canceler module to produce a third interface signal as output at a third frequency at or above baseband. The first and second frequencies may or may not be the same.

PA 3156194 v1KFC